

We claim

1. An apparatus intended for extruding thermoplastics and  
5 encompassing at least one devolatilization orifice, wherein  
at least one devolatilization orifice has been equipped with  
a metal-wire-mesh composite sheet, with a finely perforated  
metal sheet, or a slit diaphragm.
- 10 2. An apparatus as claimed in claim 1, which has at least one  
dewatering orifice, some or all of the water discharged from  
which is discharged in the liquid phase.
- 15 3. An apparatus as claimed in claim 1 or 2, which has, in the  
upstream direction, prior to a first metering means in a  
direction opposed to the conveying direction, at least one  
dewatering orifice which has been equipped with a  
metal-wire-mesh composite sheet, with a finely perforated  
metal sheet, or with a slit diaphragm.
- 20 4. An apparatus as claimed in claim 1 or 3, which has, in the  
downstream direction, after a first metering means in the  
conveying direction, at least one dewatering orifice which  
has been equipped with a metal-wire-mesh composite sheet,  
25 with a finely perforated metal sheet, or with a slit  
diaphragm.
5. An apparatus as claimed in at least one of claims 1 to 4,  
wherein the metal-wire-mesh composite sheet, the finely  
30 perforated metal sheet, or the slit diaphragm has been  
introduced into a frame, which has been attached to the  
relevant devolatilization orifices or dewatering orifices by  
means of a clamp.
- 35 6. An apparatus as claimed in at least one of claims 1 to 5,  
wherein the metal-wire-mesh composite sheet, the finely  
perforated metal sheet, or the slit diaphragm has been  
attached to the relevant orifice by means of a hinge or by  
means of a quarter-turn fastener.
- 40 7. An apparatus as claimed in at least one of claims 1 to 6,  
wherein use is made of a metal-wire-mesh composite sheet.
- 45 8. An apparatus as claimed in at least one of claims 1 to 7,  
wherein the extruder used has at least two corotating or  
counterrotating screws, the extruder being substantially

composed of the following in the conveying direction (the downstream direction)

- 5       - at least one metering section through which, by way of a metering means, a thermoplastic comprising water or comprising another vaporizable liquid is introduced into the extruder, the metering section encompassing, if desired, at least one dewatering orifice which has been equipped, if desired, with a metal-wire-mesh composite sheet, with a finely perforated metal sheet, or with a slit diaphragm,10
  - 15       - if desired, at least one squeeze section which serves for dewatering the thermoplastic and comprises at least one retarding element, and also in each case at least one associated dewatering orifice, where the latter has been equipped, if desired, with a metal-wire-mesh composite sheet, with a finely perforated sheet, or with a slit diaphragm,20
  - 25       - if desired, at least one feed section in which further thermoplastic is introduced as melt into the extruder,
  - 30       - at least one plastication section provided with mixing, kneading, and/or other plastication elements,
  - 35       - at least one devolatilization section which has at least one devolatilization orifice and in which the remaining water is removed as vapor, where at least one of the devolatilization orifices has been equipped with a metal-wire-mesh composite sheet, with a finely perforated metal sheet, or with a slit diaphragm, and
  - 35       - a discharge zone (VI).
9. An apparatus as claimed in at least one of claims 1 to 8, wherein the extruder used is one with at least one feed section.
- 40 10. An apparatus as claimed in claim 9, wherein the extruder used is one which has at least one devolatilization section arranged prior to the first feed section.
- 45 11. An apparatus as claimed in claim 10, wherein the extruder used is one which has at least one devolatilization section which follows the final plastication section.

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12. A process for preparing thermoplastics in an extruder with devolatilization, which comprises introducing a thermoplastic to an apparatus as claimed in at least one of claims 1 to 11, devolatilizing it in the apparatus, and then discharging it.
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13. A process as claimed in claim 12, wherein a thermoplastic is prepared from a water-moist component comprising up to 90% by weight of residual water, by introducing this component into the apparatus as claimed in at least one of claims 1 to 11 and, if desired, mixing it with other components, with devolatilization and dewatering, and then discharging the thermoplastic.
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14. A process as claimed in claim 12 or 13, wherein toughened thermoplastics or polymer blends comprising toughened thermoplastics are prepared.
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15. The use of the apparatus as claimed in at least one of claims 1 to 11 for preparing toughened thermoplastics or polymer blends comprising toughened thermoplastics.
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16. The use of a metal-wire-mesh composite sheet, of a finely perforated metal sheet, and/or of a slit diaphragm for the covering of devolatilization orifices and/or dewatering orifices in an apparatus for extruding thermoplastics.
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